CLAIMS

What is claimed is:

1. An optical recording system comprising:

an array of modulatable light sources; and

an objective lens positioned relative to said array of modulatable light sources such that said objective lens is capable of focusing at least one light beam from said array of modulatable light sources on a target medium.

2. The optical recording system of claim 1 wherein said array of modulatable light sources comprises an array of Vertical Cavity Surface Emitting Lasers (VCSEL).

3. The optical recording system of claim 2 wherein said VCSEL array is embedded in a substrate.

4. The optical recording system of claim 3 wherein each VCSEL of said VCSEL array is capable of writing a separate track on said target medium.

5. The optical recording system of claim 1 wherein said modulatable light sources are spaced at regular intervals.

6. The optical recording system of claim 5 wherein said regular intervals comprise center-to-center distances of at least approximately 40 microns.

7. The optical recording system of claim 1 wherein said array of modulatable light sources comprises at least one line of modulatable light sources positioned at an angle relative to a direction of movement of said target medium.

8. The optical recording system of claim 7 wherein each modulatable light source of said at least one line of modulatable light sources is associated with a separate path on said target medium.

9. The optical recording system of claim 1 further comprising:

a polarizing beam-splitter located between said array of modulatable light sources and said objective lens; and

a circularly polarizing element located adjacent said polarizing beam-splitter.

10. The optical recording system of claim 9 wherein said circularly polarizing element comprises a quarter wave plate.

11. An optical recording system comprising:

a first array of VCSEL;

a second array of VCSEL; and

an objective lens located in an optical path of each of said first and second VCSEL arrays, wherein said objective lens is capable of focusing at least one light beam from each of said first and second VCSEL arrays on a target medium.

12. The optical recording system of claim 11 wherein said first VCSEL array comprises a writing array and said second VCSEL array comprises a reading array.

13. The optical recording system of claim 12 wherein said first VCSEL array comprises a plurality of individually modulatable light sources and said second VCSEL array comprises a plurality of continuously operable light sources.

14. The optical recording system of claim 12 wherein:

said first VCSEL array is capable of emitting a plurality of light beams having a first wavelength;

said second VCSEL array is capable of emitting a plurality of light beams having a second wavelength different from said first wavelength; and

said objective lens is achromatic.

15. The optical recording system of claim 12 wherein each VCSEL of said first VCSEL array is capable of writing a separate track on said target medium.

16. The optical recording system of claim 15 wherein said first VCSEL array is positioned at an angle relative to a direction of movement of said target medium.

17. The optical recording system of claim 11 wherein said first and second VCSEL arrays are located on separate substrates.

18. The optical recording system of claim 11 wherein said first and second VCSEL arrays are located on a common substrate.

19. The optical recording system of claim 11 wherein said first and second VCSEL arrays have the same array spacing.

20. The optical recording system of claim 12 further comprising:

a first polarizing beam-splitter located between said first VCSEL array and said objective lens;

a second polarizing beam-splitter located between said first polarizing beam-splitter and said objective lens; and

a circularly polarizing plate located adjacent said second polarizing beam-splitter.

21. The optical recording system of claim 20 wherein said first polarizing beam-splitter comprises a dichroic polarizing beam-splitter.

22. An optical recording system comprising:

a writing array of VCSEL;

a reading array of VCSEL;

a dichroic polarizing beam-splitter positioned to receive a plurality of light beams from each of said writing VCSEL array and said reading VCSEL array;

a polarizing beam-splitter positioned to receive said light beams upon said light beams exiting said dichroic polarizing beam-splitter;

a circularly polarizing plate coupled to an exit face of said polarizing beam-splitter;

an achromatic objective lens positioned to receive said light beams upon said light beams exiting said circularly polarizing plate, wherein said objective lens is capable of focusing said light beams on a target medium;

at least one adjustment device coupled to said objective lens to adjust a position of said objective lens;

a detection system positioned to receive said light beams upon said light beams reflecting from said target medium, said detection system capable of providing data to control said at least one adjustment device.